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**Joint Service
Solvent Substitution
Working Group**

Greening Cleaning: Getting Science to the Shop



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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Implementing Alternatives



Targeted Processes

- Aircraft Maintenance
- Ship Maintenance
- Facility Maintenance
- Etc.

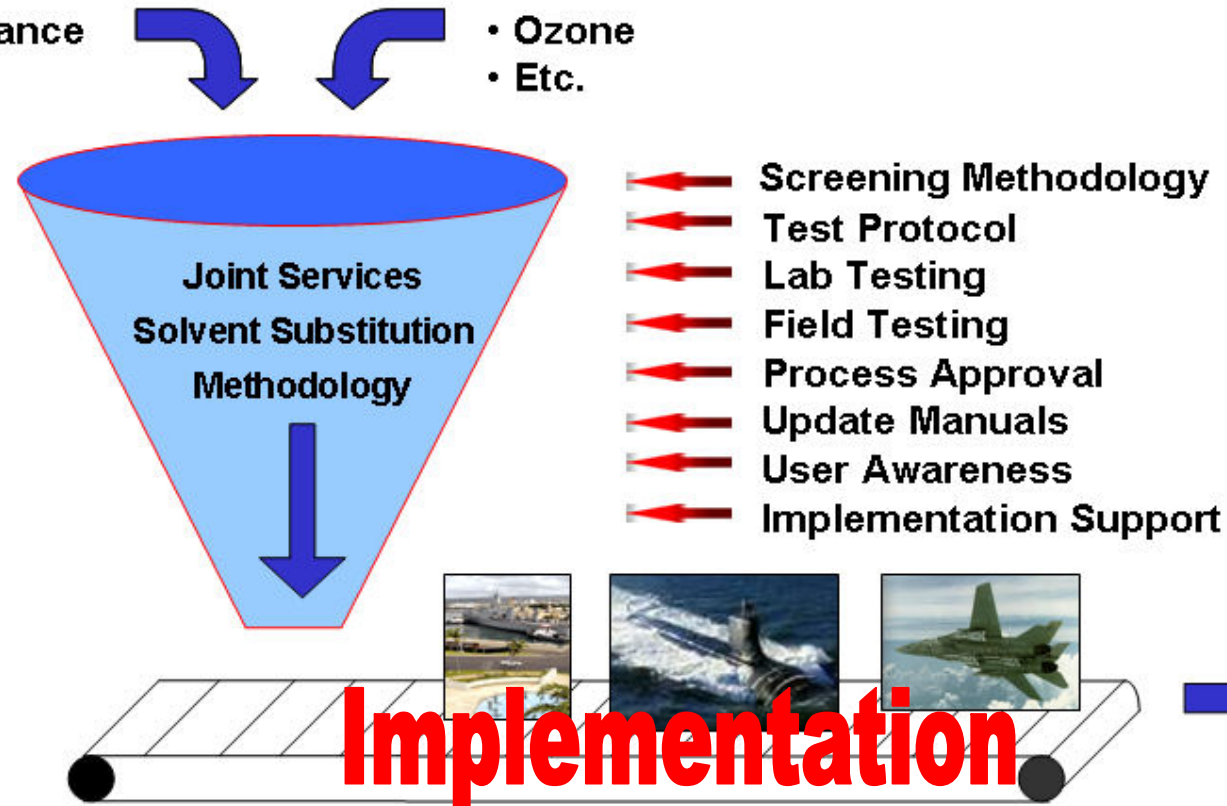
Requirement

Candidate Solutions

- Aqueous Solvents
- Biobased Solvents
- Ozone
- Etc.

Partners

- NAVSEA
- NAVAIR
- Marine Corps
- Army
- Air Force
- NASA



Processes not requiring extra record keeping & control measures

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Answer the question: “What is DoD doing to “green” cleaning operations?”

- Why? – the Challenges
- What? – the Plans

Truth #1



All cleaning
applications
are not
equivalent

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Truth #2

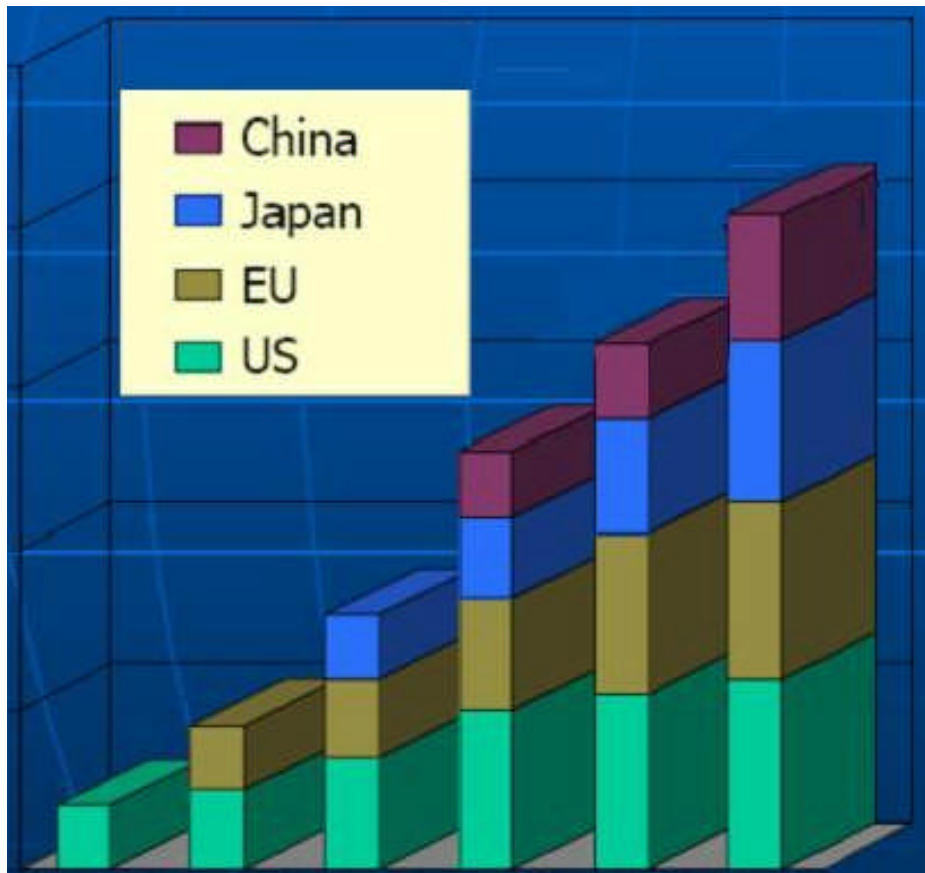


There is more to
defining a
cleaning process
than identifying
the existing
cleaner



**Performance
Requirements are
the Key!**

Truth #3



Regulations are
subject to
change

Truth #4



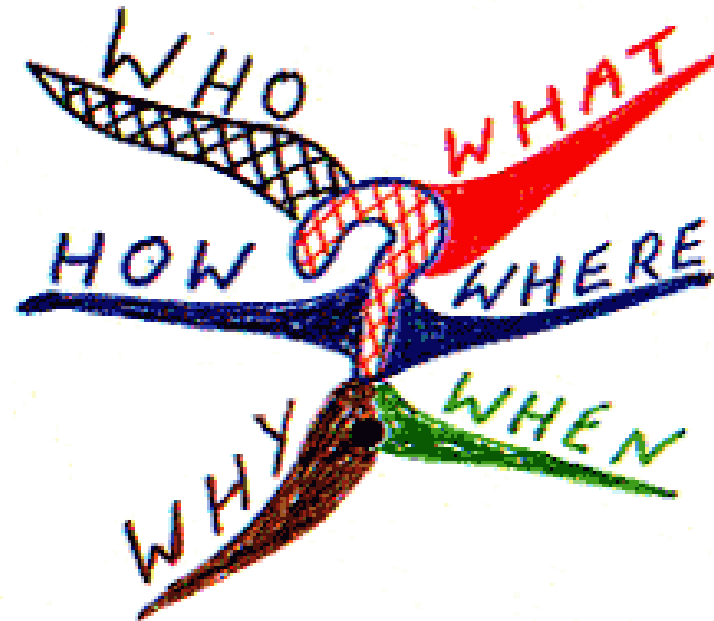
**It's not easy being Green!
And Green is not enough**

So, What Do You Do

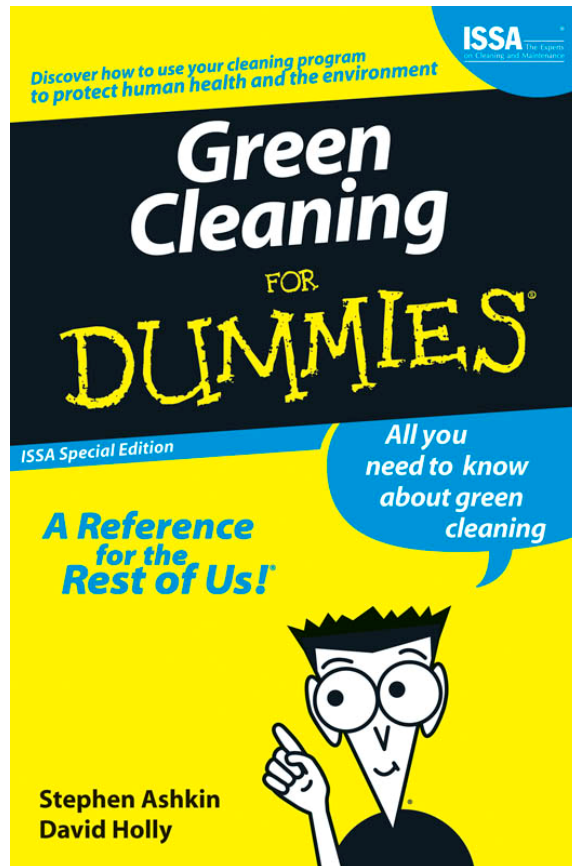


Define Performance

- Why?
- Contaminant?
- Substrates?
- Impacts?
- Process constraints?



Pursue the possible



- Adapt!
- Blends
- Containment
- Process Development
- Substitution
- Engage Industry

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Implement the Alternatives



Why doesn't good science
make it to the shop floor?

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Understand User Perspective



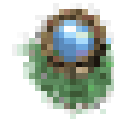
Your
reality



User reality



Learn to Empathize!

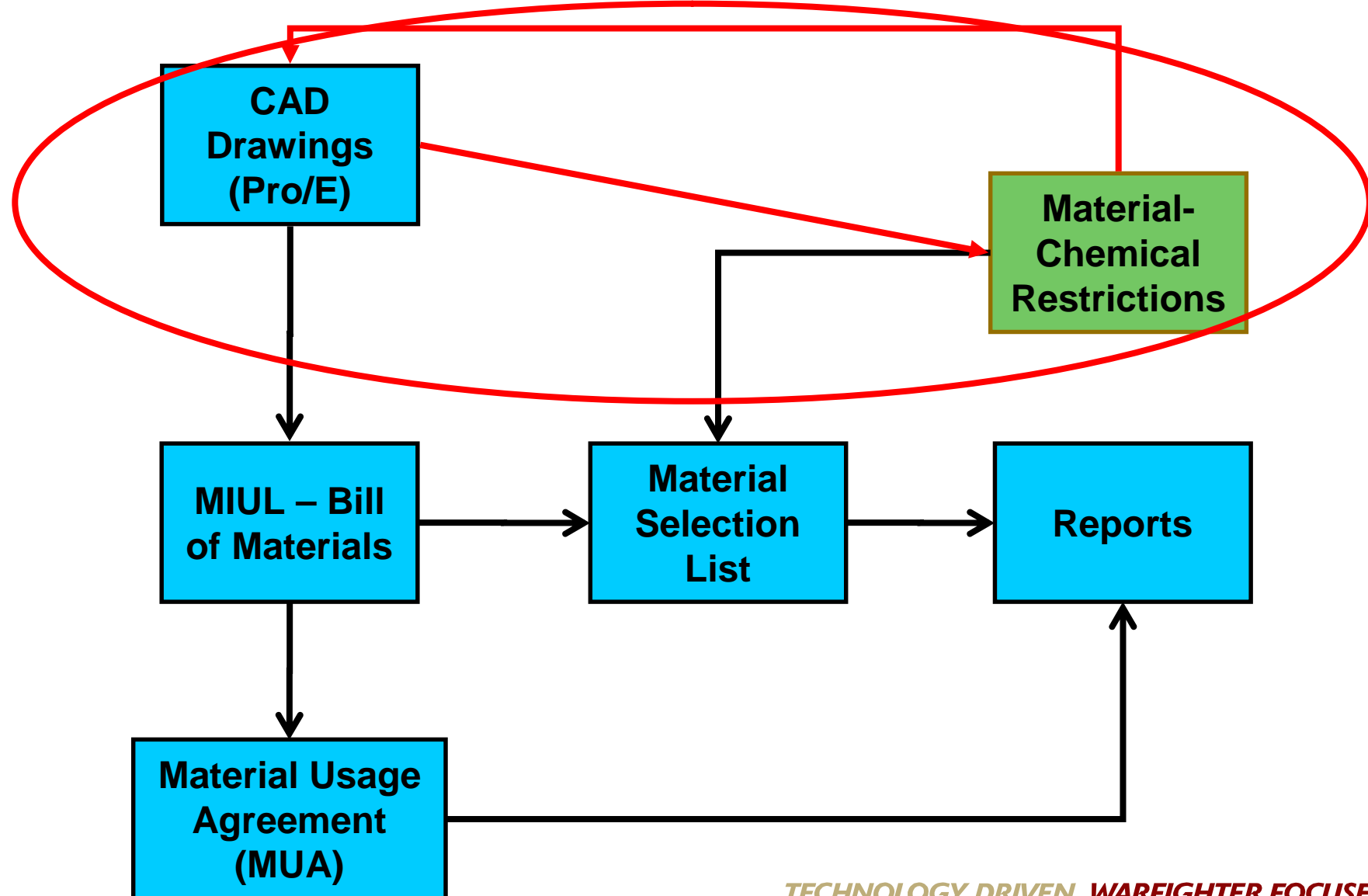


Get the Word Out



- Design engineer
- Program office
- User
- Compliance office

Influence Materials Selection

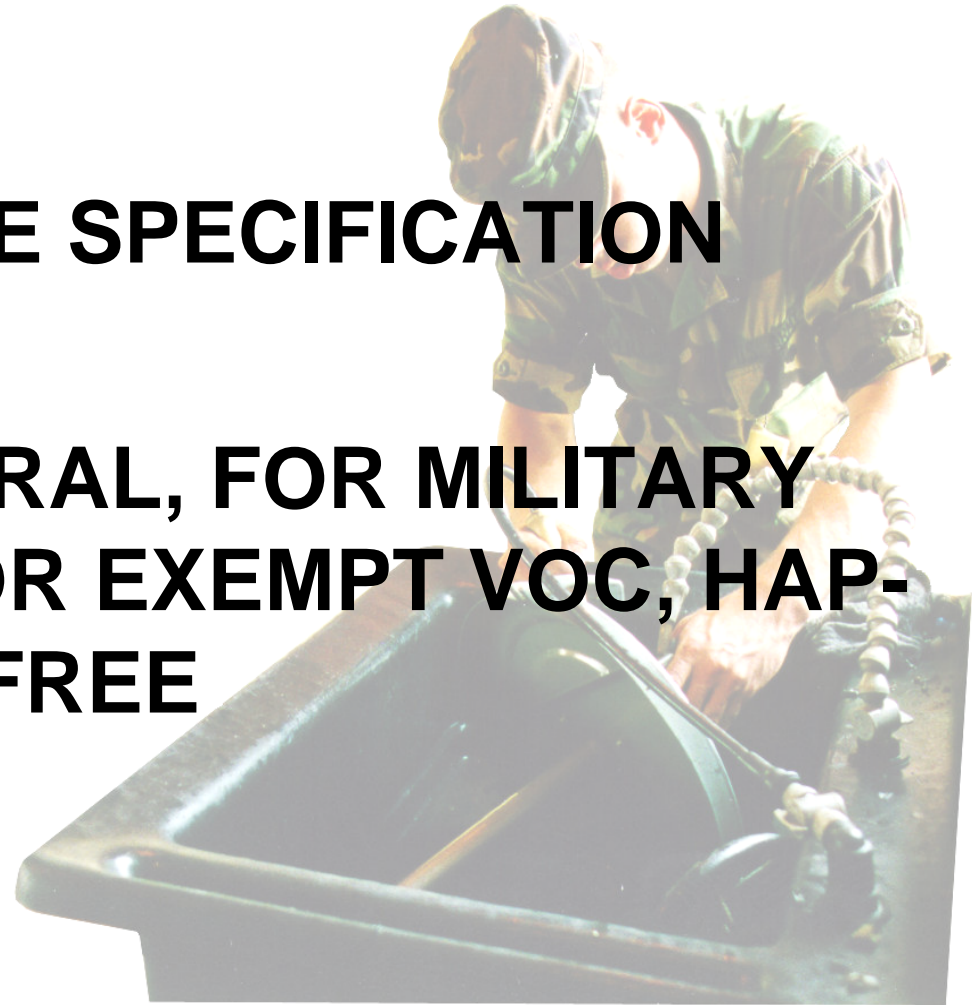


Provide Document Control



PERFORMANCE SPECIFICATION

**CLEANER, GENERAL, FOR MILITARY
SYSTEMS, LOW OR EXEMPT VOC, HAP-
FREE**



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Communication
Collaboration
Coordination



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JS3 Tools



- Methodology
- Information Exchanges
- Project Coordination
- Project Database



Summary



- **Finding alternatives is the “easy” part**
- **Green is not enough**
- **No silver bullet**
- **“First know yourself”**
- **Put information in the right hands**